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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,580	01/15/2004	Phillip C. Harris	2003-IP-011105U1	5915

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Robert A. Kent  
Halliburton Energy Services  
2600 South 2nd Street  
Duncan, OK 73536-0440

EXAMINER

SUCHFIELD, GEORGE A

ART UNIT

PAPER NUMBER

3676

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/758,580

Applicant(s)

HARRIS ET AL.

Examiner

George Suchfield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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1. The finality of the rejection of the last Office action is withdrawn, in favor of the finality of the present Office action.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 5-7, 9, 10-12 and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Burns et al (4,690,219).

Burns et al (note, e.g., col. 1, line 30 - col. 2, line 50; col. 6, line 17 - col. 7, line 25) discloses a process of fracturing and/or treating a subterranean formation, as called for in independent claims 5 and 10, including, in one embodiment, the provision of a well treatment/fracturing fluid comprising a copolymer comprising or including an acrylamide monomer and an "acrylamide copolymer derivative", such as the "AMPS" monomer, along with an aqueous liquid and carbon dioxide. Burns et al (note col. 2, line 64 – col. 3, line 28) further discloses that such well treatment/fracturing fluid exhibits "good friction reducing properties". Accordingly, the fracturing fluid utilized by Burns et al is deemed a "reduced friction fracturing fluid" and the step of introducing such fracturing/treatment fluid into the well and subterranean formation will necessarily or inherently "reduce the friction" of the well treatment/fracturing fluid, as called for in independent claims 5 and 10.

As per claims 6, 7, 11 and 12, the recited ranges of the acrylamide and "AMPS" monomers fall within or are encompassed by the corresponding ranges set forth in Burns et al (note col. 4, lines 6-23) of 10-90 % acrylamide and 0-80% "AMPS" monomer.

As per claims 9 and 14 the well treatment/fracturing fluid utilized in the process of Burns et al may further include a proppant and/or "particulates".

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As per claims 15 and 16, in all the preceding discussion, it has been noted that the “acrylamide copolymer derivative” comprises the “AMPS” monomer.

As per claims 17 and 19, the fracturing fluid and/or well treatment fluid of Burns et al may be in the form of a gel or foam.

As per claims 18 and 20, as noted previously, the reduced friction fluid properties of the fracturing fluid and/or well treatment fluid of Burns et al are imparted by the polymer component comprising acrylamide and “AMPS” monomers.

4. Claims 8 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al (4,690,219) as applied to claim 5 above, and further in view of Funkhouser et al (6,986,391).

Burns et al discloses, in one embodiment, that the exemplary polymer comprising an acrylamide and “AMPS” monomer may further contain an additional or “a fourth monomer” (col. 2, lines 6-22). Funkhouser et al discloses an exemplary polymer for use in a fracturing or well treatment fluid, which said polymer comprises both an acrylamide and “AMPS” monomer, as well as an additional monomer to acrylic acid.

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to similarly utilize acrylic acid as an additional or “fourth monomer” in the polymer component of the fracturing and/or well treatment fluid utilized in the process of Burns et al, as taught by Funkhouser et al (note col. 2, lines 23-34), in order to impart one or more of the beneficial qualities realized from including acrylic acid in the polymer component, such as high temperature stability and high salinity tolerance.

5. Claims 5, 8-10, 13, 14 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sydansk (5,711,376).

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Sydansk (note, e.g., col. 2, lines 6-24; col. 4, lines 5-44; col. 6, lines 1-25) discloses a process of fracturing and/or treating a subterranean formation, as called for in independent claims 5 and 10, including, in one embodiment, the provision of a well treatment/fracturing fluid comprising a copolymer comprising or including an acrylamide monomer and an “acrylamide copolymer derivative”, such as the “a second species” or “a third species” monomer, along with an aqueous liquid and carbon dioxide. Sydansk (note col. 4, lines 5-44) further discloses that such well treatment/fracturing fluid exhibits reduced friction loss “when the fluid is pumped through the wellbore tubulars”. Accordingly, the fracturing fluid utilized by Sydansk is deemed a “reduced friction fracturing fluid” and the step of introducing such fracturing/treatment fluid into the well and subterranean formation will necessarily or inherently “reduce the friction” of the well treatment/fracturing fluid, as called for in independent claims 5 and 10.

As per claims 8 and 13, Sydansk (col. 6, lines 1-25) may utilize acrylate as one of the polymer “species” or monomers in the polymer component. It is deemed that such reference to “acrylate” in Sydansk actually corresponds to the “acrylic acid” monomer recited in claims 8 and 13, insofar as during the polymerization reaction, the acrylic acid, per se, would be converted into acrylate in the final polymer form or chain.

As per claims 9 and 14 the well treatment/fracturing fluid utilized in the process of Sydansk may further include a proppant and/or “particulates”.

As per claims 17 and 19, the fracturing fluid and/or well treatment fluid of Sydansk may be in the form of a gel or foam.

As per claims 18 and 20, as noted previously, the reduced friction fluid properties of the fracturing fluid and/or well treatment fluid of Sydansk are imparted by the polymer component

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comprising acrylamide and “acrylamide copolymer derivative” monomers. In fact, Sydansk (col. 4, lines 30-32) specifically discloses “The polymers also function as a drag reduction agent and reduce friction loss when the fluid is pumped through the wellbore tubulars”.

6. Claims 6, 7, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sydansk (5,711,376).

The recited ranges in claims 6, 7, 11 and 12 of acrylamide and “acrylamide copolymer derivative” in the polymer utilized in the fracturing and well treatment fluid of Sydansk (col. 6, lines 1-25) are deemed an obvious matter of choice or design in carrying out the fracturing or well treatment process of Sydansk based on, e.g., the formation and/or well bore characteristics of a subterranean formation actually encountered in the field and/or result of routine experimentation for process optimization or economic feasibility.

7. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sydansk (5,711,376), as applied to claims 5 and 10 above, and further in view of Burns et al (4,690,219).

It would have been obvious to one of ordinary skill in the art to which the invention pertains, to utilize an “AMPS” monomer as the “second species” and/or “a third species” monomer in the polymer component utilized in the fracturing and/or well treatment process of Sydansk, as taught by Burns et al, applied previously, which indicates that polymers comprising the “AMPS” monomer impart “excellent stability” to the well treatment composition, in order to similarly impart or realize “excellent stability” to the well treatment or fracturing composition utilized in the process of Sydansk, as well.

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8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Other references cited also disclose the treatment and/or fracturing of a subterranean formation utilizing exemplary fracturing or well treatment fluids which may exhibit enhanced stability and/or reduced friction loss.

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's amendment, or most specifically, Applicant's actual Amendment dated October 28, 2005 necessitated the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
George Suchfield  
Primary Examiner  
Art Unit 3676

Gs  
March 4, 2006